

RECEIVED  
CENTRAL FAX CENTER

SEP 11 2009

267.186

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: :  
Salvatore Peragine, et al. : Group: 1795  
Serial No.: 10/519,691 :  
Filed: 12/27/2004 : Examiner: Phasge, Arun S.  
For: STRUCTURE .... CELLS :  
1185 Avenue of the Americas  
New York, N.Y. 10036  
September 10, 2009

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

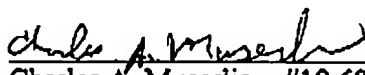
Applicant requests review of the Final Rejection in the above-identified application. No  
Amendments are being filed with this request.

This request is being filed with a Notice of Appeal.

The review is requested for the reason(s) stated on the attached sheet(s). No more than  
five pages (5) are provided.

I am the attorney of record.

Respectfully submitted,

  
Charles A. Muserlian #19,683  
Attorney for Applicant  
Tel. 212 302 8989

CAM:mlp  
Enclosures

Claims 1 to 20 have been rejected under 35 USC 103 as being obvious over the Pimlott et al patent taken in view of the Currey et al patent. The Examiner states that the Pimlott patent discloses the claimed electrode structure comprising a hollow body defining an internal volume in fluid communication with a perimetrical chamber, said hollow body housing a reinforcing and electric current distributing internal element constituted by at least one sheet provided with projections, wherein said projections have a shape equivalent to spherical caps or elliptic caps or caps with prismatic sections and the Examiner concedes that the Pimlott patent fails to disclose that chamber is delimited by a conductive surface provided with holes coated with chemically inert porous diaphragm. The Examiner cites the Currey patent teaches the use of holes coated with chemically inert porous diaphragms as claimed. The Examiner contends that membrane cells and diaphragm cells "are interchangeable in the art" citing U.S. Patent No. 4,488,946.

Applicants vigorously traverse this ground of rejection since membrane cell technology is completely non-analogous to diaphragm cell technology. It is well known to everyone skilled in the art that chlor-alkali electrolysis can be subdivided into three distinct processes, namely:

1. membrane process
2. diaphragm process
3. mercury process

and that such processes make use of corresponding disinct cells, cannot only be inferred by the proceedings of any international conference on the subject (e.g. World Chlorine Council or Euro Chloro-sponsored congresses) but even easily found in Wikipedia

([http://en.wikipedia.org/wiki/Chloralkali\\_process](http://en.wikipedia.org/wiki/Chloralkali_process)). Moreover, a "cathodic finger structure" is

known since at least forty years in the art to be a specific type of electrode (not a membrane electrolyser chamber!) made of a foraminous box or flattened tube having a porous diaphragm deposited thereon (see for instance US 3,899,408; US 3,617,461; US 3,910,827; US 3,945,909). US 4,628,596 (Currey et al), cited by the Examiner, also mentions "cathode fingers".

Applicants submit that claims of the present application are directed to a "cathodic finger structure" (which is equivalent to "cathode finger") of a diaphragm electrolytic cell. Pimlott et al is neither directed to a cathodic finger structure nor to a structural element or component of a diaphragm electrolyser, therefore it cannot anticipate or render obvious the claims of the instant application which are directed to a "cathodic finger structure of diaphragm electrolytic cell". Currey et al is silent on the main characterizing feature of the instantly claimed finger structure (a reinforcing and electric current distributing internal element constituted by at least one sheet provided with projections housed in the hollow portion of the finger).

The technical problem of improving the current distribution over the surface of a cathode finger of a diaphragm electrolyzer is not addressed by Currey et al, whose purpose is to reduce the inter-electrode gap (which is a totally different problem cited on page 2 of the present specification. The solution to such technical problem consisting of inserting a conductive sheet of improved design inside such hollow portion of the finger is consequently neither mentioned nor remotely suggested by Currey et al.

The Morris et al patent referred to by the Examiner is directed to ion-exchange membrane cells and does not equate the same with diaphragm cells. The Examiner's attention is directed to

lines 38 to 53 of column 1 of the Pimlott et al patent which discusses the difference between the two types of cells which clearly points out that one skilled in the art clearly knows the 2 types of cells are clearly patentably distinct and are not "interchangeable in the art" as the Examiner alleges. Therefore, withdrawal of this ground of rejection is requested.

Applicants traverse this rejection since the Examiner obviously does not understand that the technology for diaphragm cells membrane cells are entirely different and the two terms of diaphragm and membrane electrolyzers are not routinely used as synonyms of each other. The Examiner is wrong when he states that there is no structure to distinguish between the two types of cells. In the Response to Applicants' Arguments, the Examiner states that "arguments filed 4/7/09 have been fully considered" but they were not. The Examiner merely refused to acknowledge the difference between a membrane cell and a diaphragm cell, without bothering to consider any further remark. The Examiner further stated that "Applicants cited references which allege a difference between the two types of electrolyzer without a claim basis": Applicants do not subscribe to this view, since claims recite structural features that are nowhere to be found in Pimlott or in any other type of membrane cell.

Applicants' multiple arguments to defend inventiveness of pending claims can be summarized as follows:

1) Membrane chlor-alkali cells and diaphragm chlor-alkali cells are patentably distinct technologies

Applicants have provided an internet link as a handy reference by way of example, but any person skilled in the art of chlor-alkali electrolysis knows the difference between the two technologies. Also, Pimlott et al. are certainly to be counted among such persons, since they make a clear distinction between the two technologies in col. 1, lines 38-52 of their patent, wherein diaphragm cells provided with finger structures are criticized and explicitly disclaimed. Applicants believe that the improvement of the instant invention is instrumental in making diaphragm cells competitive again with membrane cells, but Pimlott et al.'s invention is clearly aimed at improving membrane cells without taking the older diaphragm technology into consideration.

2) The cited prior does not anticipate the claimed cathode finger structure

Pimlott et al.'s cell has no cathode finger whatsoever. Currey et al. is directed to improving an anode and not a cathode. Currey et al. is silent on the main characterizing feature of the instantly claimed finger structure, namely a reinforcing and electric current distributing internal element consisting of at least one sheet provided with projections housed in the hollow portion of the finger. The technical problem of improving the current distribution over the surface of a cathode finger of a diaphragm electrolyzer is not addressed by Currey et al., whose purpose is to reduce the inter-electrode gap (which is a totally different problem cited on page 2 of the present specification). The solution to such technical problem consisting of inserting a conductive sheet of improved design inside such hollow portion of the finger is consequently neither mentioned nor remotely suggested by Currey et al.

3) Pimlott et al. does not teach how to improve the conductivity of a cathodic structure

In the previous Office action, the Examiner stated that "the Pimlott patent discloses the claimed

electrode structure comprising a hollow body defining an internal volume (...) said hollow body housing a reinforcing and electric current distributing internal element". This is simply not true. At best, the Pimlott et al. patent disclosed a membrane electrolysis chamber, not an electrode structure, housing a reinforcing and electric current distributing internal element. Such membrane electrolysis chamber, in its turn, contains electrodes (anodes and cathodes). The electrodes of Pimlott et al.: 1) are not finger structures which are exclusive of diaphragm cells and 2) have no reinforcing and electric current distributing internal element.

If equating membrane and diaphragm cells is incorrect, equating a whole cell and an electrode of another cell is simply unbelievable.

4) None of the cited prior art documents address the problem solved by the present invention. The present invention solves the problem of improving the electrical conductivity and the internal fluid distribution of a cathode finger structure of a diaphragm cell. The cited references are silent regarding such a problem.

Therefore, the rejection fails since the two technologies are completely different.

Respectfully submitted,

---

Charles A. Muserlian #19,683  
Attorney for Applicants  
Tel. 212 302 8989

CAM:mlp  
Enclosures

**CERTIFICATION OF FACSIMILE TRANSMISSION**

I hereby certify that this paper is being facsimile transmitted to the Patent and  
Trademark Office on the date shown below.

Charles A. Muserlian  
Charles A. Muserlian #19,683

9-17-09

Serial No. 10/519,691  
267.186